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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,712	09/30/2004	Detlef P. Muller-Schulte	RO0909US(#90568)	2617

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EXAMINER	
JUNG, UNSU	
ART UNIT	PAPER NUMBER
1641	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/509,712	MULLER-SCHULTE, DETLEF P.	
	Examiner	Art Unit	
	Unsu Jung	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19, 21-23 and 25-28* is/are pending in the application.

4a) Of the above claim(s) *8-13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,14-19,21-23 and 25-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/30/04 & 4/11/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of species "luminescent protein" from List 1, "excitation frequency is higher than emission frequency from List 2, and "streptavidin" from List 3 in the reply filed on December 28, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 1-7, 12-19, 21-23, and 25-28 read on elected species.

2. Claims 1-19, 21-23, and 25-28 are pending, claims 8-13 have been withdrawn from consideration, and claims 1-7, 12-19, 21-23, and 25-28 are under consideration for their merits.

Priority

3. Receipt is acknowledged of papers filed under 35 U.S.C. 119 (a)-(d) based on an application filed in Germany on March 30, 2002. Applicant has not complied with the requirements of 37 CFR 1.63(c), since the oath, declaration or application data sheet does not acknowledge the filing of any foreign application. A new oath, declaration or application data sheet is required in the body of which the present application should be identified by application number and filing date.

Information Disclosure Statement

4. The information disclosure statements filed on September 30, 2004 and April 11, 2005 fail to comply with 37 CFR 1.98(b)(1), requires that each item of information in an IDS be identified properly. Each publication must be identified by publisher, author (if any), title, relevant pages of the publication, and date and place of publication. The information disclosure statement has been placed in the application file, but the reference that has been lined through therein has not been considered.

Shriver-Lake reference on p3 lacks place of publication and book title.

Dave et al. reference on p4 lacks date and place of publication.

5. The information disclosure statement filed on April 11, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

A copy of Hampl et al. reference on p4 is missing pages 179-187.

A copy of Lottspeich et al. reference on p3 is missing.

6. The information disclosure statement filed on September 30, 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been

placed in the application file, but the information referred to therein has not been considered.

A copy of Hampl et al. reference on p4 is missing pages 179-187.

Specification

7. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the original specification fails to include the term "self-fluorescent" recited in claim 2, "concentration of the luminescent substance being 1 to 10%-wt" recited in claim 5, and "functional groups that can be coupled to streptavidin" recited in claims 18 and 27.

8. The use of the trademark CY® (p2) and TWEEN® (p15) has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. In claim 2, the term "self-fluorescent" is vague and indefinite. The specification fails to define the term and it is unclear what the term "self-fluorescent" means.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1-6 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Walt et al. (U.S. PG Pub. No. US 2001/0029049 A1, Oct. 11, 2001).

Walt et al. anticipates instant claims by teaching a luminescent silica gel particles (see entire document) containing a transparent silica gel matrix (p7, paragraph [0077]), said transparent silica gel matrix having at least one luminescent substance (p9, paragraph [0085]), the size of said particle being at least 0.5 μm (p9, paragraph [0089]).

With respect to claims 2 and 4, Walt et al. teaches luminescent silica gel particles, wherein the luminescent substance includes fluorescein (p8, paragraph [0081]), which would not be self-fluorescent.

With respect to claim 3, Walt et al. teaches that the luminescent substance is encapsulated in said particles (p9, paragraph [0085]).

With respect to claim 6, Walt et al. teaches that any two of the luminescent substance display different emission frequencies (p8, paragraph [0082]).

With respect to claim 5, it has long been settled to be no more than routine experimentation for one of ordinary skill in the art to discover an optimum value for a result effective variable. Section 2144.05 [R3] of the MPEP presents case law upholding obviousness rejections based on optimization of ranges:

A. Optimization Within Prior Art Conditions or Through Routine Experimentation

> Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.)

The specification does not disclose that the specifically claimed range(s) of "1 to 10%-wt concentration of the luminescent substance" is for any particular purpose or to solve any stated problem that distinguishes it from the other ranges disclosed. The specification therefore lacks disclosure of the criticality required by the Courts in providing patentability to the claimed range(s).

In addition to a lack of disclosed criticality in the specification, an obviousness rejection based upon optimization must rely on prior art that discloses the optimized parameter is a result-effective variable. See MPEP 2144.05:

B. Only Result-Effective Variables Can Be Optimized

> A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result-effective variable.). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (prior art suggested proportional balancing to achieve desired results in the formation of an alloy).

Since Walt et al. teach that varying concentrations of luminescent substance can be used to produce luminescent silica gel particles (p4, paragraph [0046]), the prior art therefore provides teaching that the concentration of luminescent substance is a variable that achieves a recognized result, and satisfies the above requirement of a result-effective variable in order to set forth an obviousness rejection based on optimization.

Because Applicants fail to disclose that the claimed range(s) of "1 to 10%-wt concentration of the luminescent substance" provides a criticality to the invention that separates it from the other ranges in the specification, and the prior art discloses the concentration of luminescent substance is a variable that achieves a recognized result, it would therefore have been obvious for one of ordinary skill to discover the optimum workable range(s) of "1 to 10%-wt concentration of the luminescent substance" by normal optimization procedures known in the optically encoded particle arts.

With respect to claim 25, Walt et al. teaches a sensor array (Abstract). The limitation of "for at least one of the analysis of diagnostic testing of nucleic acids, nucleic acid fragments, proteins, peptides, antibodies, antibody fragments, cells, cell receptors, and biotinylated biomolecules and testing protein or nucleic acid libraries" is an intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Since the sensor array of Walt et al. meets all the structural limitations of claimed invention, the sensor array of Walt et al. is capable of performing the intended use.

14. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Walt et al. (U.S. PG Pub. No. US 2001/0029049 A1, Oct. 11, 2001) in light of Schwarzberg (U.S. Patent No. 4,235,869, Nov. 25, 1980).

Walt et al. teaches luminescent silica gel particles for use in an optical chemical array sensor system (see item 13 above). Walt et al. further teaches that the luminescent substances include fluoresceins (p8, paragraph [0081]). However, Walt et al. fails to teach that fluorescein has an excitation frequency higher than the emission frequency.

Schwarzberg teaches that fluorescein has excitation wavelength of 491nm and emission wavelength of 520nm (column 20, lines 45-57).

Therefore, one of ordinary skill in the art at the time of the invention would recognize that the luminescent substances (fluoresceins) of Walt et al. inherently has an excitation frequency higher than the emission frequency.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

17. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walt et al. (U.S. PG Pub. No. US 2001/0029049 A1, Oct. 11, 2001) in view of Chen et al. (*Chem. Mater.*, 1995, Vol. 7, pp1779-1783).

Walt et al. teaches luminescent silica gel particles for use in an optical chemical array sensor system (see item 13 above). Walt et al. further teaches that variety of fluorescent dyes can be employed to optically encode silica gel particles (p8, paragraphs [0081] and [0082]). However, Walt et al. fails teach luminescent silica gel particles, wherein the luminescent substance is a luminescent protein.

Chen et al. teaches a method of making optically transparent biomaterial using sol-gel encapsulation method, in which fluorescent proteins such as phycobiliproteins are added to a silica sol (see entire document, particularly p1780, Methods).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the sol-gel encapsulation method of Chen et al, in which fluorescent proteins such as phycobiliproteins are added to a silica sol, in order to produce optically encode silica particles. The advantage of optically encoding silica particles, which exhibit characteristic, i.e. unique, optical signature to a reference analyte, provides the motivation to combine teachings of Walt et al. and Chen et al. with a reasonable expectation of success as optically encoded silica particles (luminescent silica particles) with unique, optical signature can be conveniently decoded for identification of reference analyte for use in biochemical assays. Further, it would have

been obvious to one of ordinary skill in the art at the time of the invention to select a fluorescent (luminescent) protein as a fluorescent dye, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. In re Leshin, 125 USPQ 416. Because the claimed particle is known in the prior art and has been disclosed as being capable of being labeled with fluorescent dyes in general, the selection of a specific type of fluorescent dyes in itself does not present a novel feature of the claimed invention. Since one of ordinary skill in the art at the time of the invention would recognize that the particle of Walt et al. can be labeled with variety of different types of fluorescent dyes known in the optical arts, it would have been obvious to employ fluorescent proteins as the fluorescent dyes in the instant claim.

18. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walt et al. (U.S. PG Pub. No. US 2001/0029049 A1, Oct. 11, 2001) in view of Müeller-Schulte (WO 02/09125 A1, Jan. 31, 2002).

Walt et al. teaches luminescent silica gel particles for use in an optical chemical array sensor system (see item 13 above). Walt et al. further teaches that the particles (beads) encoded with one or more reporter dyes exhibit characteristic, i.e. unique, optical signature to a reference analyte (p4, paragraph [0050]). As a result, the individual sensor elements of the array are conveniently decoded simultaneously in one simple measurement (p4, paragraph [0050]). However, Walt et al. fails teach luminescent silica gel particles, further comprising a magnetic colloid.

Müeller-Schulte teaches a method for producing magnetic SiO_2 particles, comprising the following steps: a) alkoxysilanes are dispersed in water, acid-catalytically hydrolyzed and condensed to form an SiO_2 hydrosol; b) a magnetic particle-sol mixture is produced by adding magnetic particles, for example usual magnetic particles, magnetic colloids and/or ferrofluids to the SiO_2 hydrosol; c) dispensing the magnetic particle-sol mixture in an organic solvent which is immiscible with water; and d) adding a base to the magnetic particle-sol mixture during or after the dispersion in the organic solvent in order to form a gel (Abstract). The magnetic SiO_2 particles of Müeller-Schulte can be used in variety of biochemical applications include magnetic separation assays (p17, see machine translated document).

With respect to claim 17, Müeller-Schulte teaches that magnetic colloid is present in a concentration of 10-50% by weight relative to the polymer particle (see claim 69 of the machine translated document).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the magnetic SiO_2 particles of Müeller-Schulte in the optical chemical array sensor system of Walt et al. in order to use the optically encoded luminescent silica gel particles in variety of biochemical applications including magnetic separation assays. The advantage of having both the magnetic and luminescent properties in a single particle for use in biochemical applications provides the motivation to employ the magnetic SiO_2 particles of Müeller-Schulte in the optical chemical array sensor system of Walt et al. with a reasonable expectation of success as Walt et al.

teaches that variety of different types of particles can be used to produce luminescent particles.

19. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walt et al. (U.S. PG Pub. No. US 2001/0029049 A1, Oct. 11, 2001) in view of Müeller-Schulte (WO 02/09125 A1, Jan. 31, 2002) as applied to claim 15 above, and further in light of Kleiber et al. (U.S. Patent No. 6,270,965, Aug. 7, 2001).

Walt et al. in view of Müeller-Schulte teaches luminescent silica gel particles for use in an optical chemical array sensor system as discussed above (see item 18 above). Walt et al. further teaches that variety of functional groups such as aldehydes (p12, Table 1 and paragraph [0108]) can be attached to the particles for adding bioactive agents. However, Walt et al. in view of Müeller-Schulte fails to teach luminescent silica gel particles, wherein the silica gels have functional groups that can be coupled to streptavidin.

Kleiber et al. teaches that aldehyde groups covalently couple with streptavidin (see entire document, particularly column 3, lines 31-36).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention would recognize that aldehyde group on the luminescent silica gel particles of Walt et al. in view of Müeller-Schulte would be capable of coupling to streptavidin.

20. Claims 19, 21-23, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Müeller-Schulte (WO 02/09125 A1, Jan. 31, 2002) in view of Chen et al. (*Chem. Mater.*, 1995, Vol. 7, pp1779-1783) and Walt et al. (U.S. PG Pub. No. US 2001/0029049 A1, Oct. 11, 2001).

Müeller-Schulte teaches a method for producing magnetic SiO_2 particles, comprising the following steps: a) alkoxysilanes are dispersed in water, acid-catalytically hydrolyzed and condensed to form an SiO_2 hydrosol; b) a magnetic particle-sol mixture is produced by adding magnetic particles, for example usual magnetic particles, magnetic colloids and/or ferrofluids to the SiO_2 hydrosol; c) dispensing the magnetic particle-sol mixture in an organic solvent which is immiscible with water; and d) adding a base to the magnetic particle-sol mixture during or after the dispersion in the organic solvent in order to form a gel (Abstract). The magnetic SiO_2 particles of Müeller-Schulte can be used in variety of biochemical applications include magnetic separation assays (p17, see machine translated document).

With respect to claim 21, Müeller-Schulte teaches a method, wherein said organic phase contains at least one surfactive substance in a concentration of 0.1 to 15% by volume (see claims 40 and 43 of the machine translated document).

With respect to claim 22, Müeller-Schulte teaches a method, wherein the volume ratio of sol to organic phase is 1:5 to 1:30 (see claim 45 of the machine translated document).

With respect to claim 23, Müeller-Schulte teaches a method, wherein the said dispersing and cross-linking steps have duration of 2 to 5 seconds (see claim 9 of the machine translated document).

With respect to claim 26, Müeller-Schulte teaches a method, wherein the ferro-magnetic substances added to the sol substance in an amount of 10-50% by weight. (see claim 37 of the machine translated document).

With respect to claim 27, Müeller-Schulte teaches a method, further including a step of mixing an aqueous solution of organic polymer, a polysaccharide or a protein in an amount of 1-20% by volume with the sol before the dispersing step (see claims 61 and 64 of the machine translated document).

However, Müeller-Schulte fails to teach a method, wherein at least one luminescent substance is mixed with clear silica sol.

Chen et al. teaches a method of making optically transparent biomaterial using sol-gel encapsulation method, in which fluorescent proteins such as phycobiliproteins are added to a silica sol (see entire document, particularly p1780, Methods).

Walt et al. teaches particles (beads) encoded with one or more reporter dyes exhibit characteristic, i.e. unique, optical signature to a reference analyte (see entire document, particularly p4, paragraph [0050]). As a result, the individual sensor elements of the array are conveniently decoded simultaneously in one simple measurement (p4, paragraph [0050]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a step of mixing at least one luminescent substance with

the clear silica sol of Müeller-Schulte as taught by Chen et al. in order to produce optically encode silica particles. The advantage of optically encoding silica particles, which exhibit characteristic, i.e. unique, optical signature to a reference analyte, provides the motivation to combine teachings of Müeller-Schulte and Chen et al. with a reasonable expectation of success as Walt et al. teaches that optically encoded silica particles (luminescent silica particles) with unique, optical signature can be conveniently decoded for identification of reference analyte for use in biochemical assays.

21. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walt et al. (U.S. PG Pub. No. US 2001/0029049 A1, Oct. 11, 2001) in view of Müeller-Schulte (WO 02/09125 A1, Jan. 31, 2002) as applied to claim 15 above, and further in view of Tom-Moy et al. (U.S. Patent No. 5,527,711, June 18, 1996).

Walt et al. in view of Müeller-Schulte teaches luminescent silica gel particles for use in an optical chemical array sensor system as discussed above (see item 18 above). However, Walt et al. in view of Müeller-Schulte fails to teach luminescent silica gel particles, wherein the silica gels have functional groups that can be coupled to streptavidin.

Tom-Moy et al. teaches that avidin/streptavidin (column 4, lines 62-63) can be coupled to silica substrate, a biotinylated antibody can be attached to the avidin/streptavidin, and biotin can be added to block unoccupied active sites (see entire document, particularly column 2, lines 20-37). This composite surface will bind tightly to antigen with minimal nonspecific absorption (column 2, lines 35-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to coat the surface of the luminescent silica gel particles of Walt et al. in view of Müeller-Schulte with streptavidin as taught by Tom-Moy et al. in order to attach biotinylated antibody, which can bind tightly to an antigen of interest with minimal nonspecific absorption provides the motivation to combine teachings of Walt et al. in view of Müeller-Schulte and Tom-Moy et al. with a reasonable expectation of success as the luminescent silica gel particles of Walt et al. in view of Müeller-Schulte can be used to immobilize a variety of biomolecules including antibodies.

Conclusion

22. No claim is allowed.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Unsu Jung whose telephone number is 571-272-8506. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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